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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,686	12/05/2003	Lawrence E. Renck	031599/259283	4556

826 7590 09/27/2005

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EXAMINER

HUG, ERIC J

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/729,686		RENCK ET AL.	
	Examiner		Art Unit	
	Eric Hug		1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunt (US 5,277,854) in view of Owens (US 5,900,304).

Hunt discloses a method and molding apparatus for making three-dimensional fibrous grids. Hunt provides a first and second mold, each comprising a porous support plate (carrier screen 18) and a plurality of mold pieces (pads 20) attached to the support plate, each mold piece being a tapered structure. The mold pieces are spaced apart at a certain distance to form channels in between for formation of ribs. Grids are formed by depositing fiber stock onto the first mold and then pressing the stock from above with a flat plate thereby dewatering and densifying the stock to shape. See particularly Figure 6 and column 9, lines 46-51. This pre-formed grid is removed from the first mold and further compacted on a second mold. The feature of the second mold are similar to those of the first mold except that the mold pieces have a wider cross-section, lower height, and lesser taper. See Figures 9A, 9B, 9C compared to Figure 4-7. This second molding step provides for compaction of grid to the desired shape and dimensions. See also column 10, lines 38 to column 11, line 18.

The method and apparatus of Hunt differs from the method and apparatus of the present invention in that the mold pieces are elastomeric and compressible, rather than rigid. However,

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note in column 9, line 52 to column 10, line 17, that Hunt teaches forming grids with substantially straight side walls, and suggests that the elastomeric materials used for mold pieces are more rigid than those used for the mold pieces used by Setterholm (US 4,702,870), whose three-dimensional structures have curved side walls. Owens discloses that it is desirable to use rigid angled mold pieces for the purpose of forming three-dimensional structures with controlled compaction in the vertical and lateral directions, which also leaves the resulting structure with flat side walls when straight-walled mold pieces are used. Owens also teaches the rigid mold pieces will have longer durability than those used by Hunt (and Setterholm). See particularly column 4, line 18 to column 5, line 38 of Owens. Thus, it would have been obvious to one skilled in the art to utilize rigid molds in place of elastomeric molds for the purpose of forming straight-walled structures, to obtain the desired compaction and dimensions of the final structure, and to provide the mold pieces with long life.

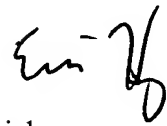
All other claimed features are disclosed by Hunt or are obvious features of the molds, or are obvious material modifications thereof. Owens teaches in column 5 that rigid mold pieces are metal, ceramic (metal oxide), or resin (plastic). Owens also teaches using porous openings in the mold (column 8, lines 32-34), and teaches drying in the mold, in particular microwave drying (column 8, lines 35-45).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is 571 272-1192. The examiner can normally be reached on Monday through Friday, 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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